Title (en)

Anisotropic drapes and systems

Title (de)

Anisotrope Tücher und Systeme

Title (fr)

Drapages anisotropes et systèmes

Publication

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Application

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- US 5780808 P 20080530
- US 5780708 P 20080530
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- US 5780308 P 20080530
- US 5781008 P 20080530
- US 5780208 P 20080530
- US 12136208 P 20081210
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- EP 09770662 A 20090529
- US 2009045749 W 20090529

Abstract (en)

[origin: WO2009146441A1] A super-absorbent dressing assembly for use with a reduced-pressure wound treatment system includes a breathable, fluid restricted dry layer for placement against a wound, a super- absorbent layer, and a non-breathable layer, and a drape extending over the non-breathable layer. A reduced-pressure interface is available to fluidly couple the super-absorbent layer to a reduced-pressure subsystem. The super-absorbent dressing assembly preferably supplies a compressive force when placed under reduced pressure. A reduced-pressure treatment system uses a super-absorbent bolster to treat wounds, e.g., linear wounds.

IPC 8 full level

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CPC (source: CN EP US)

A61F 13/00059 (2013.01 - US); **A61F 13/01017** (2024.01 - US); **A61F 13/01029** (2024.01 - US); **A61F 13/01034** (2024.01 - US); **A61F 13/01038** (2024.01 - US); **A61F 13/0209** (2013.01 - CN EP US); **A61F 13/022** (2013.01 - CN EP US); **A61F 13/0223** (2013.01 - CN EP US); **A61F 13/0243** (2013.01 - CN EP US); **A61F 13/0289** (2013.01 - CN EP US); **A61F 13/05** (2024.01 - CN EP US); **A61F 15/008** (2013.01 - EP US); **A61H 1/008** (2013.01 - EP US); **A61L 15/60** (2013.01 - CN EP US); **A61M 1/71** (2021.05 - CN EP US); **A61M 1/915** (2021.05 - CN EP US); **A61M 1/917** (2021.05 - EP); A61F 13/00 (2013.01 - EP US); A61F 2013/00131 (2013.01 - US); A61F 2013/00136 (2013.01 - US); A61F 2013/00174 (2013.01 - CN EP US); A61F 2013/00182 (2013.01 - US); A61F 2013/00246 (2013.01 - US); A61F 2013/0028 (2013.01 - US); A61F 2013/00536 (2013.01 - CN EP US); A61F 2013/0054 (2013.01 - CN EP US); A61F 2013/00748 (2013.01 - CN EP US); A61M 1/916 (2021.05 - CN EP US); A61M 2205/70 (2013.01 - US); A61M 2207/00 (2013.01 - US); A61M 2210/1007 (2013.01 - EP US); A61M 2210/1021 (2013.01 - EP US); Y10T 29/49 (2015.01 - EP US); Y10T 29/49826 (2015.01 - EP US)

Citation (opposition)

Opponent : Smith & Nephew Inc.

- EP 2103290 A2 20090923 - TYCO HEALTHCARE [US]
- US 2004064132 A1 20040401 - BOEHRINGER JOHN R [US], et al
- US 2007032755 A1 20070208 - WALSH RICHARD F [US]
- US 2002098307 A1 20020725 - SCHWARTZ ROBERT S [US], et al
- US 5743866 A 19980428 - BAUERFEIND HANS B [DE], et al
- US 5462708 A 19951031 - SWENSON DOUGLAS A [US], et al
- US 7048013 B2 20060523 - SHANNON CATHERINE [US]
- US 2003114824 A1 20030619 - ODORZYNSKI THOMAS W [US], et al
- US 2003139697 A1 20030724 - GILMAN THOMAS H [US]
- US 2005222544 A1 20051006 - WESTON RICHARD S [US]
- WO 03070135 A2 20030828 - TWO BEATS [NL], et al
- US 4224945 A 19800930 - COHEN JONATHAN
- SODY ABBY NAIMER ET AL: "Control of Traumatic Wound Bleeding by July 2006 Compression with a Compact Elastic Adhesive Dressing", MILITARY MEDICINE, vol. 171, no. 7, pages 644 - 647, XP055306240

Cited by

US11173240B2; US12083263B2; US12005181B2; US11123471B2; US9907703B2; USD866756S; US10507141B2; US10010658B2; US11160915B2; US11439741B2; US11554203B2; US10406036B2; US11564845B2; US11096831B2; US11510819B2; US11896465B2; US11116669B2; US11648152B2; US10076594B2; US11154649B2; US11564847B2; US12042361B2; US9956389B2; US10898388B2; US11247034B2; US11559437B2; US12059325B2; US9801985B2; US10561769B2; USD898925S; US11433176B2; US11717655B2; USD999914S; US12064579B2

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WO 2009146441 A1 20091203; AU 2009251242 A1 20091203; AU 2009251242 B2 20130815; AU 2009262874 A1 20091230; AU 2009262874 B2 20120823; AU 2009262875 A1 20091230; AU 2009262875 B2 20130307; AU 2009262876 A1 20091230; AU 2009262876 B2 20120524; AU 2009262877 A1 20091230; AU 2009262877 B2 20130801; AU 2009262878 A1 20091230; AU 2009262878 B2 20130516; AU 2009262879 A1 20091230; AU 2009262879 B2 20130502; AU 2009262880 A1 20091230; AU 2009262880 B2 20120913; AU 2009262881 A1 20091230; AU 2009262881 B2 20130523; AU 2009262882 A1 20091230;

AU 2009262882 A8 20111103; AU 2009262882 B2 20120913; AU 2009262884 A1 20091230; AU 2009262884 B2 20140717;
BR PI0909557 A2 20151124; BR PI0909565 A2 20190924; BR PI0909569 A2 20170704; BR PI0909570 A2 20151201;
BR PI0909571 A2 20161101; BR PI0909606 A2 20160216; BR PI0909616 A2 20160216; BR PI0909621 A2 20190306;
CA 2725556 A1 20091230; CA 2725556 C 20130319; CA 2725561 A1 20091230; CA 2725561 C 20131224; CA 2725566 A1 20091230;
CA 2725566 C 20130723; CA 2725943 A1 20091230; CA 2725943 C 20121204; CA 2725945 A1 20091230; CA 2725945 C 20171003;
CA 2726027 A1 20091230; CA 2726027 C 20171107; CA 2726038 A1 20091230; CA 2726038 C 20131126; CA 2726042 A1 20091230;
CA 2726042 C 20171017; CA 2726142 A1 20091230; CA 2726142 C 20170725; CA 2726225 A1 20091203; CA 2726225 C 20170207;
CA 2726240 A1 20091230; CA 2726240 C 20130212; CA 2970330 A1 20091230; CA 2970330 C 20190604; CA 2978001 A1 20091230;
CA 2978001 C 20200630; CA 2980359 A1 20091230; CA 2980359 C 20190827; CA 3078635 A1 20091230; CA 3078635 C 20220628;
CN 102026675 A 20110420; CN 102026675 B 20140416; CN 102036697 A 20110427; CN 102036697 B 20131106; CN 102036698 A 20110427;
CN 102036698 B 20131106; CN 102036699 A 20110427; CN 102036699 B 20130821; CN 102036700 A 20110427; CN 102036700 B 20140716;
CN 102046118 A 20110504; CN 102046118 B 20130904; CN 102046119 A 20110504; CN 102046119 B 20130904; CN 102046216 A 20110504;
CN 102046216 B 20140521; CN 102046217 A 20110504; CN 102046217 B 20140716; CN 102046219 A 20110504; CN 102046219 B 20130821;
CN 102089017 A 20110608; CN 102089017 B 20140820; CN 103405813 A 20131127; CN 103405813 B 20160210; CN 103417332 A 20131204;
CN 103417332 B 20151007; CN 103480048 A 20140101; CN 103480048 B 20160706; CN 103536975 A 20140129; CN 103536975 B 20161005;
CN 103585682 A 20140219; CN 103585682 B 20160323; CN 104117101 A 20141029; CN 104117101 B 20161005; CN 104161621 A 20141126;
CN 104161621 B 20180327; CN 105266960 A 20160127; CN 105266960 B 20201030; CN 108143539 A 20180612; CN 112206094 A 20210112;
EP 2278948 A1 20110202; EP 2278948 B1 20160413; EP 2279016 A1 20110202; EP 2279016 B1 20130821; EP 2279016 B2 20220330;
EP 2279017 A1 20110202; EP 2279017 B1 20130814; EP 2279017 B2 20220511; EP 2279018 A1 20110202; EP 2279018 B1 20161228;
EP 2279018 B8 20170419; EP 2279019 A2 20110202; EP 2279019 B1 20140903; EP 2282788 A1 20110216; EP 2282788 B1 20161214;
EP 2282788 B8 20170419; EP 2285323 A1 20110223; EP 2285323 B1 20130320; EP 2285430 A2 20110223; EP 2285430 B1 20140806;
EP 2285431 A1 20110223; EP 2285431 B1 20200311; EP 2285432 A1 20110223; EP 2285432 B1 20160323; EP 2285432 B2 20190619;
EP 2285433 A2 20110223; EP 2285433 B1 20200115; EP 2305327 A2 20110406; EP 2305327 A3 20120822; EP 2305327 B1 20161019;
EP 2305328 A2 20110406; EP 2305328 A3 20120822; EP 2305328 B1 20171101; EP 2305329 A2 20110406; EP 2305329 A3 20120829;
EP 2305329 B1 20131016; EP 2305330 A2 20110406; EP 2305330 A3 20120822; EP 2305330 B1 20141001; EP 2305330 B2 20190102;
EP 2319550 A1 20110511; EP 2319550 B1 20160420; EP 2529767 A2 20121205; EP 2529767 A3 20121212; EP 2529767 B1 20140827;
EP 2529767 B2 20180228; EP 2594298 A1 20130522; EP 2630979 A1 20130828; EP 2630979 B1 20170426; EP 2659915 A1 20131106;
EP 2659915 B1 20151007; EP 2659915 B2 20220420; EP 2666488 A2 20131127; EP 2666488 A3 20140226; EP 2666488 B1 20151007;
EP 2781166 A1 20140924; EP 2781166 B1 20151209; EP 3037115 A1 20160629; EP 3037115 B1 20180822; EP 3069701 A1 20160921;
EP 3069701 B1 20180314; EP 3069702 A1 20160921; EP 3069702 B1 20200923; EP 3156016 A1 20170419; EP 3156016 B1 20210317;
EP 3181160 A1 20170621; EP 3181160 B1 20220119; EP 3181161 A1 20170621; EP 3181161 B1 20230920; EP 3231459 A1 20171018;
EP 3311855 A1 20180425; EP 3311855 B1 20210224; EP 3456364 A1 20190320; EP 3456364 B1 20210331; EP 3656410 A1 20200527;
EP 3677230 A2 20200708; EP 3677230 A3 20201007; EP 3782663 A1 20210224; EP 3782663 B1 20230419; EP 3797616 A1 20210331;
ES 2562345 T3 20160303; HK 1151753 A1 20120210; JP 2011521736 A 20110728; JP 2011521737 A 20110728; JP 2011521738 A 20110728;
JP 2011521739 A 20110728; JP 2011521740 A 20110728; JP 2011521741 A 20110728; JP 2011521742 A 20110728;
JP 2011521743 A 20110728; JP 2011523574 A 20110818; JP 2011523870 A 20110825; JP 2011526798 A 20111020;
JP 2013116339 A 20130613; JP 2013138873 A 20130718; JP 2013144120 A 20130725; JP 2013208461 A 20131010;
JP 2013215585 A 20131024; JP 2013226421 A 20131107; JP 2013226422 A 20131107; JP 2013236946 A 20131128;
JP 2014000413 A 20140109; JP 2015120014 A 20150702; JP 2015144844 A 20150813; JP 2015180320 A 20151015;
JP 2018057911 A 20180412; JP 2018140183 A 20180913; JP 2020062495 A 20200423; JP 4981992 B2 20120725; JP 5016137 B2 20120905;
JP 5199462 B2 20130515; JP 5219104 B2 20130626; JP 5219105 B2 20130626; JP 5313340 B2 20131009; JP 5378506 B2 20131225;
JP 5406283 B2 20140205; JP 5538371 B2 20140702; JP 5538372 B2 20140702; JP 5539972 B2 20140702; JP 5642815 B2 20141217;
JP 5705916 B2 20150422; JP 5705917 B2 20150422; JP 5814306 B2 20151117; JP 5839365 B2 20160106; JP 5850467 B2 20160203;
JP 5930313 B2 20160608; JP 5969936 B2 20160817; JP 6037408 B2 20161207; JP 6103636 B2 20170329; JP 6258896 B2 20180110;
JP 6353381 B2 20180704; JP 6713977 B2 20200624; JP 7012756 B2 20220128; JP 7017968 B2 20220209; KR 101192947 B1 20121018;
KR 20110011684 A 20110208; KR 20110011696 A 20110208; KR 20110016963 A 20110218; KR 20110018359 A 20110223;
KR 20110018392 A 20110223; KR 20110019762 A 20110228; KR 20110022642 A 20110307; KR 20110022643 A 20110307;
KR 20110028468 A 20110318; KR 20110033126 A 20110330; KR 20110033129 A 20110330; MX 2010012957 A 20101220;
MX 2010012958 A 20101220; MX 2010012959 A 20101220; MX 2010012970 A 20110412; MX 2010013067 A 20101221;
MX 2010013069 A 20101221; MX 2010013131 A 20101221; MX 2010013132 A 20101220; MX 2010013133 A 20101220;
MX 2010013134 A 20101220; MX 359709 B 20181008; RU 2010146765 A 20120720; RU 2010146770 A 20120710;
RU 2010146771 A 20120710; RU 2470672 C2 20121227; RU 2471509 C2 20130110; RU 2472533 C2 20130120; TW 200950823 A 20091216;
TW 200950829 A 20091216; TW 200950830 A 20091216; TW 200950831 A 20091216; TW 200950832 A 20091216;
TW 200950833 A 20091216; TW 201002249 A 20100116; TW 201002276 A 20100116; TW 201002375 A 20100116; TW 201002376 A 20100116;
TW 201002377 A 20100116; US 10076447 B2 20180918; US 10143593 B2 20181204; US 10226384 B2 20190312; US 10245184 B2 20190402;
US 10478345 B2 20191119; US 10568768 B2 20200225; US 10695225 B2 20200630; US 10744040 B2 20200818; US 11020277 B2 20210601;
US 11382796 B2 20220712; US 11413193 B2 20220816; US 11419768 B2 20220823; US 11793679 B2 20231024; US 11969319 B2 20240430;
US 2009293887 A1 20091203; US 2009299249 A1 20091203; US 2009299255 A1 20091203; US 2009299256 A1 20091203;
US 2009299257 A1 20091203; US 2009299307 A1 20091203; US 2009299308 A1 20091203; US 2009299340 A1 20091203;
US 2009299341 A1 20091203; US 2009299342 A1 20091203; US 2009312728 A1 20091217; US 2012029487 A1 20120202;
US 2012110822 A1 20120510; US 2012130326 A1 20120524; US 2012165765 A1 20120628; US 2012191054 A1 20120726;
US 2012203189 A1 20120809; US 2012220964 A1 20120830; US 2012271255 A1 20121025; US 2012277699 A1 20121101;
US 2013190668 A1 20130725; US 2013197457 A1 20130801; US 2014194836 A1 20140710; US 2014207092 A1 20140724;
US 2014228789 A1 20140814; US 2014303578 A1 20141009; US 2015119865 A1 20150430; US 2015290366 A1 20151015;
US 2016015569 A1 20160121; US 2016120703 A1 20160505; US 2017196736 A1 20170713; US 2018008470 A1 20180111;
US 2018008471 A1 20180111; US 2018125719 A1 20180510; US 2019133828 A1 20190509; US 2019142643 A1 20190516;
US 2019175414 A1 20190613; US 2020046565 A1 20200213; US 2020146894 A1 20200514; US 2020276055 A1 20200903;
US 2021022925 A1 20210128; US 8100848 B2 20120124; US 8129580 B2 20120306; US 8133211 B2 20120313; US 8147468 B2 20120403;
US 8167856 B2 20120501; US 8172816 B2 20120508; US 8188331 B2 20120529; US 8202261 B2 20120619; US 8241261 B2 20120814;
US 8399730 B2 20130319; US 8409156 B2 20130402; US 8480605 B2 20130709; US 8679080 B2 20140325; US 8715253 B2 20140506;
US 8722959 B2 20140513; US 8747375 B2 20140610; US 8795244 B2 20140805; US 8920395 B2 20141230; US 9095468 B2 20150804;
US 9173788 B2 20151103; US 9204999 B2 20151208; US 9572719 B2 20170221; US 9744079 B2 20170829; US 9750641 B2 20170905;
US 9895269 B2 20180220; WO 2009158123 A2 20091230; WO 2009158123 A3 20100318; WO 2009158123 A8 20110203;
WO 2009158124 A1 20091230; WO 2009158125 A1 20091230; WO 2009158125 A8 20110217; WO 2009158126 A1 20091230;
WO 2009158126 A8 20110203; WO 2009158127 A1 20091230; WO 2009158127 A8 20110203; WO 2009158128 A2 20091230;
WO 2009158128 A3 20100415; WO 2009158129 A1 20091230; WO 2009158129 A8 20110317; WO 2009158130 A1 20091230;
WO 2009158130 A8 20110203; WO 2009158131 A1 20091230; WO 2009158131 A8 20110203; WO 2009158133 A2 20091230;
WO 2009158133 A3 20100429; WO 2009158133 A8 20110203

DOCDB simple family (application)

US 2009045743 W 20090529; AU 2009251242 A 20090529; AU 2009262874 A 20090529; AU 2009262875 A 20090529;
AU 2009262876 A 20090529; AU 2009262877 A 20090529; AU 2009262878 A 20090529; AU 2009262879 A 20090529;
AU 2009262880 A 20090529; AU 2009262881 A 20090529; AU 2009262882 A 20090529; AU 2009262884 A 20090529;

BR PI0909557 A 20090529; BR PI0909565 A 20090529; BR PI0909569 A 20090529; BR PI0909570 A 20090529; BR PI0909571 A 20090529;
BR PI0909606 A 20090529; BR PI0909616 A 20090529; BR PI0909621 A 20090529; CA 2725556 A 20090529; CA 2725561 A 20090529;
CA 2725566 A 20090529; CA 2725943 A 20090529; CA 2725945 A 20090529; CA 2726027 A 20090529; CA 2726038 A 20090529;
CA 2726042 A 20090529; CA 2726142 A 20090529; CA 2726225 A 20090529; CA 2726240 A 20090529; CA 2970330 A 20090529;
CA 2978001 A 20090529; CA 2980359 A 20090529; CA 3078635 A 20090529; CN 200980117665 A 20090529; CN 200980118521 A 20090529;
CN 200980118878 A 20090529; CN 200980118886 A 20090529; CN 200980118887 A 20090529; CN 200980118938 A 20090529;
CN 200980118946 A 20090529; CN 200980119147 A 20090529; CN 200980119612 A 20090529; CN 200980119613 A 20090529;
CN 200980119621 A 20090529; CN 201310308383 A 20090529; CN 201310308384 A 20090529; CN 201310341893 A 20090529;
CN 201310466785 A 20090529; CN 201310466823 A 20090529; CN 201410315361 A 20090529; CN 201410315871 A 20090529;
CN 201510603255 A 20090529; CN 201810154175 A 20090529; CN 202011083392 A 20090529; EP 09755801 A 20090529;
EP 09770658 A 20090529; EP 09770659 A 20090529; EP 09770660 A 20090529; EP 09770661 A 20090529; EP 09770662 A 20090529;
EP 09770663 A 20090529; EP 09770664 A 20090529; EP 09770665 A 20090529; EP 09770666 A 20090529; EP 09770668 A 20090529;
EP 10188488 A 20090529; EP 10188490 A 20090529; EP 10188492 A 20090529; EP 10188493 A 20090529; EP 11151735 A 20090529;
EP 12171212 A 20090529; EP 13155466 A 20090529; EP 13169039 A 20090529; EP 13174166 A 20090529; EP 13174167 A 20090529;
EP 14171247 A 20090529; EP 15196111 A 20090529; EP 16160705 A 20090529; EP 16164739 A 20090529; EP 16199896 A 20090529;
EP 16206175 A 20090529; EP 16206186 A 20090529; EP 17164507 A 20090529; EP 17199322 A 20090529; EP 18189610 A 20090529;
EP 20151390 A 20090529; EP 20151937 A 20090529; EP 20196313 A 20090529; EP 20208838 A 20090529; ES 14171247 T 20090529;
HK 11105990 A 20110614; JP 2011511877 A 20090529; JP 2011511878 A 20090529; JP 2011511879 A 20090529; JP 2011511880 A 20090529;
JP 2011511881 A 20090529; JP 2011511882 A 20090529; JP 2011511883 A 20090529; JP 2011511884 A 20090529;
JP 2011511885 A 20090529; JP 2011511886 A 20090529; JP 2011511888 A 20090529; JP 2013021874 A 20130207;
JP 2013036543 A 20130227; JP 2013036867 A 20130227; JP 2013111510 A 20130528; JP 2013112903 A 20130529;
JP 2013112925 A 20130529; JP 2013112948 A 20130529; JP 2013139933 A 20130703; JP 2013150463 A 20130719;
JP 2015034714 A 20150225; JP 2015062135 A 20150325; JP 2015121561 A 20150616; JP 2017235283 A 20171207;
JP 2018062401 A 20180328; JP 2020005250 A 20200116; KR 20107027973 A 20090529; KR 20107027982 A 20090529;
KR 20107028138 A 20090529; KR 20107028139 A 20090529; KR 20107028635 A 20090529; KR 20107029626 A 20090529;
KR 20107029630 A 20090529; KR 20107029649 A 20090529; KR 20107029651 A 20090529; KR 20107029652 A 20090529;
KR 20107029653 A 20090529; MX 2010012957 A 20090529; MX 2010012958 A 20090529; MX 2010012959 A 20090529;
MX 2010012970 A 20090529; MX 2010013067 A 20090529; MX 2010013069 A 20090529; MX 2010013131 A 20090529;
MX 2010013132 A 20090529; MX 2010013133 A 20090529; MX 2010013134 A 20090529; RU 2010146765 A 20090529;
RU 2010146770 A 20090529; RU 2010146771 A 20090529; TW 98118064 A 20090601; TW 98118065 A 20090601; TW 98118067 A 20090601;
TW 98118068 A 20090601; TW 98118077 A 20090601; TW 98118080 A 20090601; TW 98118081 A 20090601; TW 98118105 A 20090601;
TW 98118106 A 20090601; TW 98118109 A 20090601; TW 98118115 A 20090601; US 2009045742 W 20090529; US 2009045744 W 20090529;
US 2009045746 W 20090529; US 2009045747 W 20090529; US 2009045749 W 20090529; US 2009045750 W 20090529;
US 2009045751 W 20090529; US 2009045752 W 20090529; US 2009045753 W 20090529; US 2009045755 W 20090529;
US 201113253711 A 20111005; US 201213352549 A 20120118; US 201213363889 A 20120201; US 201213407360 A 20120228;
US 201213437884 A 20120402; US 201213437898 A 20120402; US 201213455383 A 20120425; US 201213468866 A 20120510;
US 201213546161 A 20120711; US 201313769127 A 20130215; US 201313796295 A 20130312; US 201414175743 A 20140207;
US 201414220706 A 20140320; US 201414252605 A 20140414; US 201414267722 A 20140501; US 201414309705 A 20140619;
US 201514751438 A 20150626; US 201514867933 A 20150928; US 201514931350 A 20151103; US 201715411395 A 20170120;
US 201715656697 A 20170721; US 201715668132 A 20170803; US 201815864937 A 20180108; US 201816156756 A 20181010;
US 201916242825 A 20190108; US 201916278638 A 20190218; US 201916596424 A 20191008; US 202016740004 A 20200110;
US 202016875587 A 20200515; US 202017062382 A 20201002; US 47523109 A 20090529; US 47525709 A 20090529;
US 47528509 A 20090529; US 47530109 A 20090529; US 47531909 A 20090529; US 47532809 A 20090529; US 47536709 A 20090529;
US 47537309 A 20090529; US 47538009 A 20090529; US 47539809 A 20090529; US 47540709 A 20090529